

NATIONAL ARMORIES—EXPENSES, &c.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING

Report of the officer in charge of the Ordnance Bureau, relative to the national armories, and the arms manufactured therein.

JANUARY 11, 1845.

Read, and referred to the Committee on Military Affairs.

WAR DEPARTMENT, January 9, 1845.

SIR: I respectfully transmit, herewith, a report of the officer in charge of the Ordnance Bureau, showing the expenses of the national armories, and the arms, &c., manufactured therein, during the last year terminating on the 30th of June, 1844, prepared in compliance with the act of April 2, 1794; together with estimates, plans, and drawings of lands and buildings deemed necessary for the improvement of those establishments.

Very respectfully, your obedient servant,

WM. WILKINS,
Secretary of War.

HON. JOHN W. JONES,
Speaker of the House of Representatives.

ORDNANCE OFFICE,
Washington, January 6, 1845.

SIR: I have the honor to transmit, herewith, a statement of the expenses of the national armories, and of the arms and appendages made therein, during the year ended 30th June last; prepared in pursuance of the act of Congress of April 2, 1794.

I take this occasion to state that both the armories, in conformity to your instructions, have recently been inspected, and their condition carefully examined, as set forth in the following reports, viz:

Harper's Ferry armory.—This establishment is divided—one part, on the Shenandoah, being devoted to the manufacture of rifles; the other, on the Potomac, to the fabrication of muskets. During the past season, the canal, which supplies the power from the dam on the Potomac, has received

extensive and thorough repairs in new head gates, a pier-head and ice-breaker, and new gates to the lock, which admits boats with coal and other supplies for the armory; indeed, the whole mass of masonry at the head of the canal, and the lock, have been renewed, and the canal cleared out; whereby the power will be much increased in periods of low water, and a more uniform supply of water be obtained. These repairs have been much needed for several years; the opportunity of a cessation of work has been taken, and the whole has been done in a substantial manner, calculated to endure the shocks of floods and ice freshets, to which they are annually exposed.

A large workshop, 123 by 42 feet, two stories high, for barrel-boring and other operations, has been constructed in place of a narrow and inconvenient shop, which had become much dilapidated.

A storehouse of two stories, 93 by 30 feet, has been built for storing iron, steel, and other supplies, in a location much more convenient to the shops than the place formerly used for such purposes.

A new proof-house has been erected, with rooms for loading and inspecting barrels, 70 by 30 feet, admirably well designed and suited to use; this is covered with a sheet-iron roof. The other new buildings are slated; and the whole are constructed in the most substantial manner, of durable materials, reflecting great credit on the officer in charge of the establishment.

Besides the above, much has been done to improve the works; several frame buildings, such as an engine-house, lime-house, additions to several dwelling-houses, &c., and repairs to shops, have been effected.

There are still several shops of large dimensions in a wretched condition; having been originally placed too low, upon insecure foundations, they are scarcely tenantable, and should all be rebuilt; some of them immediately. The experience had in relation to the river floods enables us to place all new structures at a suitable elevation, so that no injury will be sustained from them in future, except in some very remarkable and unusual cases. The officer who has recently taken charge of the armory has furnished plans and estimates for renewing several of these defective buildings; they have been prepared since the completion of the annual estimates submitted to Congress, and the importance and urgency of the case is believed sufficient to justify their presentation at this time; and I therefore respectfully recommend them to your favorable consideration.

The machinery for boring gun-barrels has been renewed entirely; and that for stocking muskets is nearly completed. Many machines for the various processes in making the component parts of arms have been devised and put into successful operation. Further additions to the number are required, and will be provided, from time to time, as speedily as possible.

The additions to the rifle works on the Shenandoah consist of a filing shop, two stories high, 73 by 24 feet, covered with slate, and several water wheels renewed; the whole machinery has also undergone changes and renewals consequent on the change from the manufacture of Hall's patent arms to that of the new model percussion rifle. Several buildings at these works require immediate re-construction, being in a state of decay. They were originally built of perishable or inferior materials, in a cheap manner, placed on insecure foundations, and, from false notions of economy, generally of too small dimensions. The estimate before mentioned includes several items of the most pressing nature required at these works.

Some years ago, (viz: in 1830,) it was deemed proper to purchase one

acre of land at the lower end of the armory canal, on the Potomac, to give more room for its extension, and quiet all claims to the land on its margin. The price then asked was \$5,000. The appropriation for this purpose was ultimately made in 1836; but, in the mean time, some of the land had changed owners; buildings had been erected on it; the price then demanded was far beyond the amount appropriated; it could not be purchased, and the money reverted to the surplus fund in the treasury. The reasons which formerly required this purchase have existed and gathered new force in consequence of the manner in which the ground is now occupied, but the cost at this time will be far beyond anything heretofore demanded. The officer in charge of the armory has presented a sketch of the ground, showing the position of all the buildings upon it, and an estimate of the amount necessary to purchase the whole. I respectfully urge the importance of his views, as set forth in the papers herewith. Every year will add to the value of the land, and the necessity for the purchase will become stronger, as the hazard to the valuable machinery and workshops becomes greater. Although the cost will now be great, the position of things will not be improved by delaying the measure; and I therefore recommend the purchase at this time.

The product of the armory at Harper's Ferry, in finished work, during the last fiscal year, is very limited, and does not show the great amount that has been expended in making large quantities of the component parts of arms. The change of models, at both branches, to the new percussion musket and rifle, has involved a heavy expenditure; and such work as has been performed during the year was done under serious disadvantages, enhancing the cost and interrupting operations by the delay in getting up the necessary machines, causing, in a measure, the suspension of work, and evils of various kinds, which, it is believed, are now surmounted, and cannot again occur. Amongst these evils, the necessary discharge of many workmen for want of suitable employment has been prominent, but unavoidable. It is desirable that all the operatives employed be of good habits, and, possessing the requisite skill, should have constant and full work; and no pains will be spared to carry out this principle.

A careful inspection of the accounts, books, and papers, in the several offices of the commanding officer, the paymaster and storekeeper, and the master armorer, was made; and the result justifies me in stating that the supplies of various kinds are procured at the lowest cash prices, and of proper quality; and the whole system of accountability for both money and property is well understood and carried into effect throughout all parts of the establishment.

Finally, the difficulties consequent on the change of models being surmounted—and they have almost equalled the creation of a new establishment, deducting the cost of buildings and motive power—it may be expected that the work will now be done in the best manner; that arms of superior quality, of the most approved patterns, will be furnished, and at less cost.

Springfield armory.—A careful and thorough inspection of this armory has been made, and its condition affords ground for bestowing high commendation upon the officer who has, for some time past, directed its operations. The judicious location of a steam-engine at the workshops on the hill, distant from the water power, effects a great reduction in the cost of work. It affords a blast for twenty-two fires in the forging-shop, and mo-

tive power for a great number of machines used in finishing many component parts of arms, as well as lathes, &c., used in the machine-shop; and much power still remains unapplied, which will be devoted to various useful operations, as the machinery is fitted for it from time to time. The rearrangement of the forging-shop, on the latest and most approved plan, excites involuntary admiration. Nothing can be found to surpass it in convenience and economy; indeed, the steam-engine itself, with all its appurtenances and uses, is an object worthy of a visit to the armory. The great economy resulting from such an auxiliary to hand labor, and saving the transportation back and forth from the hill to the water-shops of the arms in various stages of preparation, besides avoiding delay, is of striking benefit, and is one cause of the great reduction in the cost of arms. That cost is now less than twelve dollars per musket; and when barrel iron of still better quality than at present used shall be obtained, it will fall below eleven dollars.

There is a deficiency of room for the convenient storage of finished arms; and since the preparation of the annual estimates submitted to Congress, it has been deemed proper to ask for an appropriation of \$40,000 for the construction of a large building capable of receiving at least one hundred thousand muskets. The value of these arms will exceed \$1,000,000; and due precautions for their safety demand that a substantial fire-proof building should be provided for them. The dry and airy location of the armory is highly favorable to the preservation of arms; and its position is also convenient for their prompt distribution to various parts of the country, to meet the demands of the service.

The supplies of every kind are provided at reasonable prices. The accounts and papers of the paymaster are in perfect order, and brought up to the day of inspection. The property in his charge is in good condition, and the required statements and returns are all promptly rendered. The efficiency of the acting master armorer and his assistants and inspectors, is manifested by the good quality of the finished arms; and the system of accountability for materials and component parts is carefully maintained.

The discontent of the armorers, and opposition amongst the operatives to the new system of things established under the law of 1842, appear to have subsided; and it is believed that all parties concur in opinion that the change has resulted in great benefit to the establishment, to say nothing of the reduction that has been made (of one-third) of the cost of arms.

I would respectfully state that great confidence may be placed in the skill and talents of the officer in charge of the armory; and his plans for advancing the interests of the establishment, and improving various parts, are entitled to much consideration. An enlarged view of its great importance as a national work, commensurate with the objects for which it is provided, and which it is successfully fulfilling, will, it is believed, lead to the conclusion that it should receive all the fostering care and favor which its warmest friends can demand.

Respectfully submitted,

G. TALCOTT,
Lieut. Col. Ordnance.

Hon. WM. WILKINS,
Secretary of War.

Statement of the expenses of the national armories, and of the number of arms, &c., made thereat, from July 1, 1843, to June 30, 1844.

Armories.	Expenditures.					Arms and appendages manufactured.												
	For repairs, improvements, and new machinery.	For repairs other than those embraced in the foregoing column.	For expenses incurred prior to the year.	For materials, tools, and workmanship on arms and appendages, including salaries and all incidental expenses.	Total expenditures.	Muskets—flint lock.	Muskets—percussion.	Cadet arms—percussion.	Musketoons.	Hall's rifles.	Model percussion rifle.	Ball screws.	Wipers.	Screwdrivers.	Spring vices.	Flint caps.	Bullet moulds.	
Springfield -	\$38,098 97	-	-	\$101,141 73	\$139,240 70	4,700	2,956	234	-	-	-	430	8,529	17,085	2,059	1,239	-	
Harper's Ferry	32,736 40	\$2,309 66	\$2,202 28	91,844 95	129,093 29	608	-	-	1	2,700	1	73	15,315	3,123	304	-	3,191	
Total -	70,835 37	2,309 66	2,202 28	192,986 68	268,333 99	5,308	2,956	234	1	2,700	1	503	23,844	20,208	2,363	1,239	3,191	

NOTE.—A large portion of the expenditures at Harper's Ferry armory was incurred in preparing for the manufacture of the new percussion arms, and in fabricating component parts thereof, which cannot appear in the above report of articles manufactured, as that includes only such as are completed and turned over to the military storekeeper.

ORDNANCE OFFICE, *Washington, January 6, 1845.*

G. TALCOTT,
Lieutenant Colonel of Ordnance.

HARPER'S FERRY ARMORY, *December 12, 1844.*

SIR: I have the honor to enclose, herewith, schedules A and B, with a plat of a part of the public property at this place, with the adjacent lots belonging to private individuals.

These schedules and plat exhibit the relative locality of some of the public buildings, and of such lots and parts of lots adjoining, belonging to private individuals, with a description of the improvements thereon, and the price for which the whole can be purchased for the United States from the respective owners.

These papers have been prepared with the full belief that when the danger and inconvenience of having private property, over which the United States has no control, so immediately contiguous to public buildings of great value, are made known and understood, speedy arrangements will be made to purchase out such private property, and thus secure the control of it to the United States.

The considerations to offer for the purchase of this property are, to secure the public buildings bordering the armory canal from danger of fire occurring along the alley; to which casualty there is great liability, from the many stables and small shanties situate thereon.

The public buildings adjoining are generally filled with machinery, and immensely valuable; the loss of any one of which would be threefold the value of the whole of these private lots with their improvements—not to consider the loss to be sustained by a general interruption to the operations of the armory.

But even should fire originate in the rear of one of the public buildings, the confined situation of this narrow alley would be a serious (perhaps insurmountable bar) to its being checked; as was the case in May, 1824, when a valuable building was totally consumed from fire occurring in a shed in the rear, covering one of the water-wheels. Could access have been had readily, and room to play the engines in this alley, the fire would have been promptly put out before it communicated to the main building.

Another great inconvenience is, that this alley is, for the most part, occupied by stables, and used by the tenants of the lots, whose residences are generally on High street, as an approach to their premises; here is received their wood and other supplies, and it is made a place of deposit for all the filth and offal made in the vicinity—its only place of removal, whenever it is removed, being into the armory canal; thus occasioning labor and expense in cleaning out from time to time.

This too has been a fruitful cause, and perhaps the chief one, of the sickness that at times prevails.

There are other reasons that may be urged; but as you, from your knowledge of the locality and the condition of things, are familiar with them, I shall not now touch on them.

The schedule A includes the whole of such lots, and the improvements thereon, between High street and the alley, that can be purchased. Also the two lots and buildings, Nos. 11 and 12, at the entrance of the armory enclosure, about which I shall say more hereafter; and, considering all things, I would certainly recommend that this entire purchase be made, rather than a part, as shown in schedule B.* The purchase would secure

* The estimate of schedule A, accompanying the drawings, is \$50,261; while that of B is \$31,648.

some good comfortable dwellings on High street, suitable for inspectors and other officers whose quarters are furnished to them. And thus quartered, the stables, shanties, &c., being removed, and the alley permanently widened to a broad avenue of (say) 40 feet, they could have the armory buildings always under view, and the declivity between these dwellings and the avenue neatly cultivated. There is a want of good buildings for dwellings for the armorers. The greater part of those built many years since, of wood, and in low damp situations, are in wretched bad condition, continually requiring repairs, so as to consume in a great degree the amount received from rents. The purchase of those in schedule A would secure several good residences, so much needed to be occupied in place of so many of the old structures now tottering in decay, and consuming, by continual expenses for repairs, the rent fund.

The lots Nos. 11 and 12 are covered entirely with buildings occupied as stores. They are situated, as you will perceive on the plat, in front of the armory enclosure, and allowing only a narrow entrance to the armory. This approach is most generally filled with horses, wagons, &c., and the empty packages turned out from the stores, and is the usual mart where the country people exhibit their products for sale, rendering the place filthy, and frequently interrupting the entrance into the armory.

This nuisance can only be corrected by purchasing out the property.

Schedule B is submitted only as an alternative, in the event of the whole of the appropriation asked for in A not being obtained.

This list embraces, besides the lots Nos. 11 and 12, a part of those extending down from High street to the alley bordering the canal. Twenty-five feet of the lower end of each of these lots would include the stables, shanties, &c., from which danger is to be apprehended; this, added to the width of the alley, 15 feet, would interpose a clear space of 40 feet, besides the width of the canal, between the public buildings and any structures that the proprietors of the lots might choose to put up hereafter.

Four of the lots embraced in this schedule, as will be seen on reference to the plat, will have to be purchased entire, as the owners are unwilling to sell a part.

This arrangement, however, if decided on, would still leave the armory canal as a receptacle for filth and the washing of the street; therefore I would urge that the schedule A be only considered. Besides, the additional cost for the entire lots will secure dwelling-houses that are fully worth the difference; and I must observe that the cost at which the buildings have been put down is generally below a present fair valuation of them, with perhaps the exception of a part of lot No. 12, at the entrance gate. The price asked by the owner is high, though he states that to be the amount which would yield at 6 per cent. the rent that he has been offered for the house—that is \$300 per annum.

Both these schedules provide for the purchase of Dr. Marmion's buildings, which he, by permission many years since, erected on the public land.

This I believe is the last of these sort of claims; and it is desirable, I think, that it be arranged, if the terms at which he offers can be approved.

I have had the buildings valued by Mr. Fuss, the master carpenter, who is fully competent to do so, and who sets down the valuation at \$2,260,—exceeding the sum which Dr. Marmion proposes to sell for, \$260.

Dr. Marmion's proposition is herewith enclosed.

In connexion with this subject, I submit also a proposition from Mr.

Byrnes, the owner of a part of what is called "Byrnes's island," the residue of the island being already in the possession and occupancy of the United States.

As the price asked appears to be reasonable, (\$1,500,) I would recommend the purchase of it, as the only means of keeping off bad neighbors, and affording excellent gardening ground for the armorers, who will be disposed to cultivate it on sufferance.

I am, sir, very respectfully, &c.,

JOHN SYMINGTON,
Major of Ordnance.

Lieut. Col. GEORGE TALCOTT,
Ordnance Department, Washington City.

A.

Schedule of lots, and improvements thereon, owned by private individuals, adjoining the public buildings at the Harper's Ferry armory, with description of the improvements on each lot, and the price for which the whole can be purchased—these lots being included within the yellow lines marked on the accompanying plat.

Number of lot.	Owner of ground.	Owner of buildings.	Description of the buildings, &c.	Price of ground.	Price of buildings.	Total.
11	Mrs. Swayne	- Richard D. Doran	Double brick building, 40 by 40 feet, 2 stories high, with finished garret and shingled roof; cellar underneath; an open gallery in front; back buildings of brick, 2 stories; lower story occupied as stores, upper story and garret as dwellings	\$2, 286	\$4, 000	\$6, 286
Part of 12	G. B. Wager	- Richard D. Doran	Two-story brick building, with finished garret and cellar, 35 by 30 feet, covered with shingles; lower story occupied part as a drug and general variety store, and part as a shoemaker's shop; the upper story, including garret, as dwellings	1, 600	1, 600	3, 200
Part of 12	Henry Yost	- Henry Yost	Two-story brick building, continuation of the building above-described, and under same roof, 25 by 30 feet; lower story occupied as a general variety store, upper story as a dwelling	-	-	5, 000
16	Mrs. Swayne	- -	A large wooden stable, 60 by 30 feet, and loft above	182	218	400
17	Mrs. Swayne	- J. G. Wilson	A small wooden house, 16 by 14 feet, 1 story	182	18	200
18	G. B. Wager	- Samuel Lover	On High street a 2-story brick house, 30 by 22 feet, covered with shingles, and cellar underneath; on the alley a stable for wood, with loft for hay	725	1, 700	2, 425
19	G. B. Wager	- Charles Button	On High street a 2-story brick house, 30 by 22 feet, covered with shingles, and cellar underneath; a porch in front and rear; on the alley a wooden stable, with hay loft 20 by 18 feet	725	1, 700	2, 425
20	G. B. Wager	- Philip Coons	On High street a 2-story brick house, with basement, and cellar under basement, 34 by 23½ feet, covered with slate, well finished; on the alley a 2-story stone house, 26 by 22 feet, covered with shingles	725	2, 500	3, 225
21	G. B. Wager	- G. B. Wager	On High street a 2-story stone house, with basement, 30 by 26 feet, covered with slate, with back buildings, all well finished; on the alley a stone stable 26 by 20 feet, with hay loft; also, a stone smoke-house 10 by 9 feet	750	2, 050	2, 800
22	G. B. Wager	- William Megraw	On High street a 2-story stone house, with basement, 30 by 26 feet, covered with slate, well finished, and a stone corn-house 14 by 9 feet; on the alley a wooden stable 27 by 20 feet, with hay loft	750	2, 200	2, 950

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Schedule of lots and parts of lots, &c.—Continued.

Number of lot.	Owner of ground.	Owner of buildings.	Description of the buildings, &c.	Price of ground.	Price of buildings.	Total.
23	Mary Thompson	Mary Thompson	A small wooden building of little value on the alley - - -	-	-	\$900
24	Mrs. Swayne -	A. Kelley -	On High street a 2-story frame house, with basement, 24 by 20 feet, covered with shingles; in the middle of the lot a 1-story frame house 24 by 16; on the alley a wood blacksmith's shop 20 by 18 feet - -	\$750	\$850	1,600
25	A. & R. Cross -	A. & R. Cross -	On High street a wooden shanty of little value, 25 by 25 feet - -	600	50	650
26	Mrs. Swayne -	P. Hagan -	On High street a 2-story stone house, with basement, 24 by 20 feet, covered with shingles; on the alley a 2-story stone house, 30 by 26 feet, covered with slate, and a 1-story stone kitchen, 14 by 12 feet - -	800	1,800	2,600
27	M. Foley -	M. Foley -	Vacant on High street, on the alley, a 2-story stone house, 30 by 20 feet, covered with slate, and a 2-story stone kitchen, 28 by 16 feet, shingle roof - - -	-	-	2,000
28	Mrs. Swayne -	P. Hagan -	On High street a stone foundation, and a wooden building partly erected, 30 by 25 feet; on the alley a 2-story stone house, 26 by 20 feet, slated roof - - -	800	1,200	2,000
29	Martin Grace -	M. Grace -	Vacant on High street, on the alley, a 2-story stone house, 28 by 20 feet, with a 1-story stone kitchen, 18 by 15 feet, both covered with slate - -	-	-	1,500
30	M. Breitenbaugh -	M. Breitenbaugh -	A 2-story brick house, with basement, 26 by 22 feet, well finished - -	-	-	1,700
31	Mrs. Swayne -	M. Grace -	Some walling and an old wood building - - -	350	60	410
32	M. Grace -	M. Grace -	A 1-story wooden building of little value; good stone foundation - -	-	-	1,100
33	Mrs. Swayne -	Mrs. Swayne -	A 1-story wooden building of little value - - -	350	40	390
34	M. Grace -	M. Grace -	On the alley a 2-story stone house, 30 by 18 feet; another stone house 2 stories, 20 by 18 feet; a 1-story wooden house, 25 by 20 feet, and another 1-story building, 20 by 12; the stone houses are partially new; the wood house of little value - - -	-	-	3,000
H	United States -	Dr. N. Marmion -	A stone house 2-stories, with basement and gallery, 35 by 22 feet; also, a wooden 1-story house, 16 by 14 feet - - -	-	-	2,000
			For payment for part of "Byrnes's island" - - -	-	-	1,500
						50,261

HARPER'S FERRY ARMORY, December 12, 1844.

JOHN SYMINGTON, Major of Ordnance.

B.

Schedule of lots and parts of lots, and improvements thereon, owned by private individuals, adjoining the public buildings at the Harper's Ferry armory, with description of the improvements on each lot, and the price for which the whole can be purchased—these lots and parts of lots being included within the blue lines marked on the accompanying plat.

Number of lot.	Owner of ground.	Owner of buildings.	Description of the buildings.	Price of ground.	Price of buildings.	Total.
11	Mrs. Swayne	- Richard D. Doran	A double 2-story brick building, with gallery, finished garret and cellar, 40 by 40 feet, covered with shingles; back building of brick, 2 stories; lower story stores, upper story dwellings	\$2, 286	\$4, 000	\$6, 286
Part of 12	G. B. Wager	- Richard D. Doran	A 2-story brick building, and finished garret and cellar, 35 by 30 feet, shingle roof; lower story drug store and shoemaker's shop, upper story dwellings	1, 600	1, 600	3, 200
Part of 12	Henry Yost	- Henry Yost	A 2-story brick building, continuation of the foregoing described building, 25 by 30 feet, same finish; lower story country store, upper story dwellings	-	-	5, 000
16	Mrs. Swayne	- - -	A large wooden stable, with hay loft, 60 by 30 feet	182	218	400
17	Mrs. Swayne	- J. G. Wilson	A small wooden house, 16 by 14 feet, 1 story	182	18	200
18	G. B. Wager	- S. Lover	A wood stable, with hay loft, of little value	182	18	200
19	G. B. Wager	- Charles Button	A small wood stable, with hay loft, 20 by 18 feet	182	28	210
20	G. B. Wager	- Philip Coons	A 2-story stone house, 26 by 22 feet, covered with slate	182	1, 000	1, 182
21	G. B. Wager	- G. B. Wager	A 2-story stone house on High street, with basement, 30 by 26 feet, covered with slate, with back buildings all well finished; on the alley a stone stable 26 by 20 feet, with hay loft; also, a stone smoke-house 10 by 9 feet	750	2, 050	2, 800
22	G. B. Wager	- William Megraw	A wooden stable, with hay loft, 27 by 20 feet	182	48	230
23	M. Thompson	- M. Thompson	A small wooden building	200	20	220
24	Mrs. Swayne	- A. Kelley	A wood blacksmith's shop, 20 by 18 feet	182	218	400
25	A. & R. Cross	- A. & R. Cross	A small wooden shanty	600	50	650
26	Mrs. Swayne	- P. Hagan	A 2-story stone house, 30 by 26 feet, slated roof, and a 1-story stone kitchen, 14 by 12 feet	190	900	1, 090
27	M. Foley	- M. Foley	A 2-story stone house, 30 by 20 feet, slated roof, and 2-story stone kitchen, 28 by 16 feet; shingle roof	-	-	2, 000
28	Mrs. Swayne	- P. Hagan	A 2-story stone house, 26 by 20 feet, slated roof	180	900	1, 080

Schedule of lots and parts of lots, &c.—Continued.

Number of lot.	Owner of ground.	Owner of buildings.	Description of the buildings.	Price of ground.	Price of buildings.	Total.
29	M. Grace	M. Grace	A 2-story stone house, 28 by 20 feet, with a 1-story stone kitchen, 18 by 15 feet, both slated	-	-	\$1,500
34	M. Grace	M. Grace	A 2-story stone house, 30 by 18 feet; another stone house, 2-story, 20 by 18 feet—these partially new; and a 1-story wooden house 25 by 20 feet, and one other 1-story wooden house 20 by 12 feet—the wooden buildings of little value	-	-	3,000
H	United States	Dr. N. Marmion	A 2-story stone house, with basement and gallery, 35 by 22 feet, and a wooden 1-story back building	-	-	2,000
						31,648

HARPER'S FERRY ARMORY, December 12, 1844.

JOHN SYMINGTON,
Major of Ordnance.

No. 1.

Estimate in detail for reconstructing smiths' forges.—(See plan No. 1.)

2,452 yards excavation of earth for foundation walls of building, at 18 cents	- - - -	\$441 36
195 yards excavation of earth for foundation of forge fires, at 18 cents	- - - -	35 10
1,761 perches masonry for foundation walls of building, laid in cement, at \$2	- - - -	3,522 00
300 perches masonry for foundation walls of forge fires, at \$2	- - - -	600 00
718 feet of cut stone water-table, at 60 cents	- - - -	430 80
762 feet of cut-stone cornice, at 60 cents	- - - -	457 20
360 feet of cut-stone window caps, at 60 cents	- - - -	216 00
175,000 hard bricks, laid in mortar, one-third cement, at \$10 50 per M.	- - - -	1,837 50
88,000 feet of lumber, at 1½ cent	- - - -	1,320 00
1,200 lbs. nails, at 4¼ cents	- - - -	51 00
900 feet of window glass, at 8 cents	- - - -	72 00
12,050 feet of tinned sheet-iron roof, at 10 cents	- - - -	1,205 60
548 feet of copper gutter, at 70 cents	- - - -	383 60
112 feet of copper spouting, at \$1 05	- - - -	117 60
Lock, hinges, screws, &c., 28 sheet-iron hoods, pipes, and water-troughs for forges	- - - -	550 00
Oil and paint	- - - -	115 00
Carpenter's work	- - - -	1,632 00
Painting and glazing	- - - -	125 00
Transportation of materials, and contingencies	- - - -	388 24
		<u>13,500 00</u>

No. 2.

Estimate in detail for coal houses or bins.—(See plan No. 2.)

BITUMINOUS COAL BIN.

426 yards of excavation, at 18 cents	- - - -	\$76 68
411 perches masonry laid with cement, at \$2	- - - -	822 00
20,748 bricks laid, at \$10 per M.	- - - -	207 48
2,500 feet of yellow-pine timber, at 1½ cent	- - - -	37 50
3,500 feet of yellow-pine plank, at 1½ cent	- - - -	52 50
200 lbs. nails, at 4¼ cents	- - - -	8 50
166 feet of locust scantling, at 5 cents	- - - -	8 30
150 lbs. hinges and fastening for doors, at 12½ cents	- - - -	18 75
35 days carpenter's work, at \$1 50	- - - -	52 50
6 days calking and pitching roof, at 80 cents	- - - -	4 80
Pitch and oakum	- - - -	11 00
		<u>1,300 00</u>

CHARCOAL HOUSE.

185 yards of excavation, at 18 cents	-	-	-	\$33 30
220 perches masonry laid with cement, at \$2	-	-	-	440 00
4,800 feet of yellow-pine plank, at 1½ cent	-	-	-	72 00
3,400 feet of yellow-pine timber, at 1½ cent	-	-	-	51 00
249 feet of locust scantling, at 5 cents	-	-	-	12 45
300 lbs. nails, at 4¼ cents	-	-	-	12 75
200 lbs. hinges and fastenings for doors, at 12½ cents	-	-	-	25 00
45 days carpenter's work, at \$1 50	-	-	-	67 50
8 days calking and pitching roof, at 80 cents	-	-	-	6 40
Pitch and oakum	-	-	-	9 60
				<hr/>
				730 00

No. 3.

Estimate in detail for engine house.—(See plan No. 3.)

147 yards of excavation, at 18 cents	-	-	-	\$26 46
67 perches masonry laid with cement, at \$2	-	-	-	134 00
26,000 hard bricks laid, at \$10 per M.	-	-	-	260 00
160 feet of cut-stone water-table and cornice, at 60 cents	-	-	-	96 00
2,000 feet of lumber, at 1½ cent	-	-	-	30 00
100 lbs. iron for hanging doors, at 12½ cents	-	-	-	12 50
600 feet of slating, at 10 cents	-	-	-	60 00
36 days carpenter's work, at \$1 50	-	-	-	54 00
8 days painting, at \$1 45	-	-	-	11 60
50 lbs. nails, at 4¼ cents	-	-	-	2 12
480 feet of paving, at 6 cents	-	-	-	28 80
Oil and paint	-	-	-	4 52
				<hr/>
				720 00

No. 4.

Estimate in detail for building a revetment wall on the north side of the canal, from the boring-mill to the tilt-shop, and for paving the top of the canal bank with flags, and the area between the shops and canal bank with brick.

1,326 yards of excavation, at 18 cents	-	-	-	\$238 68
856 perches masonry laid with cement, at \$2	-	-	-	1,712 00
907 yards flagging with stone, at 50 cents	-	-	-	453 50
80 square brick paving, at \$8	-	-	-	640 00
Making coffer-dam	-	-	-	305 82
				<hr/>
				3,350 00

No. 5.

Estimate for paymaster's quarters.—(See drawing No. 2, which accompanied the annual estimate.)

960	cubic yards of excavation, at 25 cents	-	-	\$240 00
250	perches masonry, at \$1 50	-	-	375 00
202,500	bricks laid, at \$10 per M.	-	-	2,025 00
1,614	feet of cut stone, at 60 cents	-	-	968 40
10	marble mantel-pieces, at \$35	-	-	350 00
33,433	feet of yellow-pine scantling, at 1 $\frac{3}{4}$ cent	-	-	585 07
7,077	feet of yellow-pine flooring, 1 $\frac{1}{4}$ inch, at 3 cents	-	-	212 31
10,864	feet of yellow-pine plank, 1 inch, at 1 $\frac{3}{4}$ cent	-	-	190 12
50,250	feet of white-pine plank, at 5 cents	-	-	251 25
3,037	yards of plastering, at 25 cents	-	-	759 25
4,716	feet of slating, at \$10 per 100	-	-	471 60
858	feet of window glass, 12 by 18, at 12 $\frac{1}{2}$ cents	-	-	107 25
	Hardware, including locks, hinges, screws, nails, &c.			239 75
	Carpenter's work	-	-	1,800 00
	Painting, including materials	-	-	188 10
	Enclosing four acres of ground with paling fence			
	eight feet high	-	-	275 87
	For contingencies	-	-	500 00
				<hr/>
				9,538 97
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No. 6.

Estimate in detail for two lumber houses.—(See plan No. 4.)

214	yards of excavation, at 18 cents	-	-	\$38 52
138	perches masonry laid in cement mortar, at \$2	-	-	276 00
70,000	bricks laid in mortar one-third cement, at \$10 50 per M.	-	-	735 00
34,000	feet of lumber, at 1 $\frac{1}{2}$ cent	-	-	510 00
134	feet of cut-stone water-table, at 60 cents	-	-	80 40
430	feet of cut-stone cornice, at 60 cents	-	-	258 00
4,208	feet of slating, at 10 cents	-	-	420 80
800	lbs. nails, at 4 $\frac{1}{4}$ cents	-	-	34 00
600	lbs. hinges and fastenings for doors, at 12 $\frac{1}{2}$ cents	-	-	75 00
	Oil and paint	-	-	45 00
	Painting	-	-	65 00
	Carpenter's work	-	-	650 00
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				3,187 72
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No. 7.

Estimate for rebuilding with hammered stone, laid in cement, forebay of the boring and turning shop at the rifle factory.

Masonry of forebay	-	-	-	-	\$1,100 00
Repairing wood forebays of other shops	-	-	-	-	100 00
					<hr/>
					1,200 00
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No. 8.

Estimate for rebuilding with hammered stone eight forebays for barrel-welding forges, and reconstructing the revetment wall of the canal embankment in the rear of the shop.

113 $\frac{1}{4}$ perches of hammered stone-work laid in cement in forebays, at \$4 per perch	-	-	-	-	\$453 00
534 yards of excavation, at 25 cents	-	-	-	-	133 50
6 cast-iron cylinders to connect with penstocks, at \$55 each	-	-	-	-	330 00
6 cast-iron pipes for gate rods, at \$40 each	-	-	-	-	240 00
Carpenter's work, renewing and repairing penstocks	-	-	-	-	600 00
					<hr/>
					1,756 50

Revetment wall.

241 yards of excavation, at 25 cents	-	-	-	\$60 25
317 perches masonry laid in cement and mortar, at \$2 50	-	-	-	792 50
				<hr/>
				852 75
				<hr/>
				2,609 25
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No. 9.

Estimate for rebuilding forebay of the grinding mill, with hammered stone-work laid in cement.

90 yards of excavation, at 25 cents	-	-	-	\$22 50
102 perches of hammered stone laid in cement, at \$4	-	-	-	408 00
Millwright work on breast gates	-	-	-	350 00
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				780 50
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No. 10.

Estimate for constructing forebay of hammered stone for new boring-mill.

50 yards of excavation, at 25 cents - - - -	\$12 50
234 perches of well-bedded stone laid in cement, including arches for penstock and tail-race, at \$4 per perch - -	936 00
Millwright work on breast gates - - - -	125 00
	<hr/>
	1,073 50
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Nos. 11, 12, and 13.

Machinery.

For the purchase and fitting up of a turbine wheel and bevel gearing - - - - -	\$550 00
For driving machinery in the new boring-mill - - - -	1,800 00
For the purchase of fan bellows, and fitting up with * * * and flue-pipes for smiths' forges - - - -	955 00
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Recapitulation of the foregoing estimates.

No. 1. For reconstructing smiths' forges - - -	\$13,500 00
No. 2. For two coal-houses or bins - - -	2,030 00
No. 3. For engine-house - - -	720 00
No. 4. For building revetment walls, paving, &c. - -	3,350 00
No. 5. For building paymaster's quarters - - -	9,538 97
No. 6. For two lumber-houses - - -	3,187 72
No. 7. For reconstructing forebay of rifle factory - -	1,200 00
No. 8. For reconstructing eight forebays for barrel-welding forges, &c. - - -	2,609 25
No. 9. For reconstructing forebay for grinding mill -	780 50
No. 10. For constructing forebay at new boring mill -	1,073 50
No. 11. For purchase, &c. of turbine wheel and bevel gear- ing - - -	550 00
No. 12. For driving machinery for new boring mill -	1,800 00
No. 13. For fan bellows, &c. for smiths' forges - -	955 00
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HARPER'S FERRY ARMORY,
November 30, 1844.

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